American Automobile Manufacturers Association

Chrysler Corporation · Ford · General Motors

ANDREW H. CARD, Jr.
President and Chief Executive Officer

March 1, 1995

Mr. William F. Caton, Acting Secretary
Federal Communications Commission
1919 M Street N.W., Room 222
Washington, DC 20554

Dear Mr. Caton:

RE: Reply Comments to Docket Submissions -- Federal Communications Commission, ET Docket No. 94-124

The American Automobile Manufacturers Association (AAMA) submits the following reply comments for FCC review.

Reply to Comments of Hewlett-Packard Company (HP)

The AAMA supports the recommendation of HP that measurements for EIRP be made in the far-field of the antenna. The limit to be applied would be scaled if the far-fields region exceeds three meters. However, AAMA does not agree that there is need for a second measurement in the near-field for health standard compliance as proposed by HP. One measurement may be used to show compliance to both the forthcoming mmW rules and health standards. Thus, AAMA opposes a second measurement.

The AAMA assumes the references to unlicensed devices in paragraphs 14, 17, 18, 19, and 22 of HP's comments apply to services other than vehicular radar systems except where specifically stated. In particular, the reference to a national registry in Section 14 and "smart" transmitters in Section 18(D) would be opposed by the AAMA if applied to vehicle radars. For comments on Section 20 E, refer to the "Reply to Comments on Spurious Levels" section below.

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Reply to Comments of Honda, Mitsubishi, Fujitsu, etal for 60 GHz

The AAMA does not oppose the granting of an additional vehicular radar band from 60 to 61 GHz as requested by the Japanese. However, the AAMA opposes any loss of a currently proposed band to accommodate this request. The newly proposed 60 - 61 GHz band is not a viable alternative to the AAMA requested bands, nor is it being considered in Europe. The European "Drive" and "Prometheus" projects are in the 76 to 77 GHz band.

Reply to Comments of VORAD

The AAMA supports the FCC in its effort to keep this rulemaking focused to spectrum at and above 40 GHz in order to expedite the procedure. AAMA recommends that spectrum issues below 40 GHz, such as 24.675 to 24.775 GHz spectrum issues raised by VORAD, be reviewed under different proceedings so as not to dilute the efforts in the current proceedings.

The AAMA disagrees with VORAD's contention (item 8 page 2) that an "effective vehicle radar system" can be produced at the proposed 30 $\mu W/cm^2$ power density limit. (Statements by Epsilon Lambda and the Japanese companies also imply this). The phrase "effective vehicle radar system" is not definitive. The effectiveness of a system is dependent on optimizing parameters such as maximum range, frequency, pulse repetition frequency, etc. that effect power requirements. Additionally, such a statement implies a mature product with no potential for advanced development. AAMA's comments to the FCC Docket 94-124, Bandwidth and Power Justification (page 15), Required Peak Radiated Power (page 22), and Power Requirement Summary (page 22) sections, provides the technical background and justification to support higher power limits.

In item (8) second paragraph, VORAD implies that the only method of meeting the IEEE C95.1 standard is in utilizing the FCC's power density limits given in Docket 94-124. AAMA would like to reiterate its position as stated in its original response to Docket 94-124. Even at higher power levels than those suggested by the FCC, the vehicular radar systems will be designed to comply with IEEE C95.1 or equivalent. No special interlocks will be necessary or desirable.

General Reply to Comments on Spurious Levels

As indicated in many of the comments to the NPRM[1] , the limit for out-of-band spurious signals may be too severe. HP and VORAD proposed to reduce the requirement from 72 dB to 50 dB referenced to the maximum main beam power. Since vehicular system operation will occur only on roadways and because the systems are highly directional, relatively low power, and attenuate rapidly with range, vehicular radar systems will be affected the most by spurious in-band signals. In the AAMA comments, pages 17 and 18, it was shown that spurious levels 25 dB below the AAMA recommended maximum power densities for both in-band and out-of-band signals are sufficient for the operation of the radar systems and sufficiently protects other bands. Thus we reiterate our request for a 25 dB limit as shown in Table 3 of the AAMA January 30th comments. The cost burden associated with stricter limits (50 dB) will significantly influence product design.

Reply to Comments of Epsilon Lambda

AAMA acknowledges Epsilon Lambda's request for and separation for spread spectrum and CW communication systems. Since, however, the vehicular radar system may be either one, the AAMA requests that the FCC exclude the vehicular radar band from any rules concerning separation of spread spectrum from CW.

Reply to Comments of General Motors/GM Hughes

After discussions with GM representatives, AAMA has clarified the intent of GM in paragraph 59 of their comments. The alternative of engaging the radar system only when in gear instead of a km/hr requirement was intended to relate only to forward looking radars. Backup warning systems must be active before the vehicle begins moving to be effective. Since side and backward looking systems will have significantly lower power levels and range than forward looking systems. they normally operate at levels which do not require any special precautions. Moreover, this example is intended to show an alternative to the km/hr requirements. AAMA's position is that

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[1] VORAD paragraph 12, Epsilon Lambda page 4 comments on section 15.253 and paragraph 47, AAMA Table 3, General Motors/GM Hughes paragraphs 41 through 48, Hewlett-Packard Company paragraph 20 and Table 3, Hughes Aircraft Company paragraph 25 and 26, Fixed Point-to-Point Communications page 16.

no special interlocks should be mandated or other restrictions be placed on vehicle operation. The requirement should be in terms of a performance standard (i.e. IEEE C95.1) and allow the individual manufacturers to determine the most cost effective way to comply.

General Note: After the initial comment period, it was discovered that the proposed vehicular radar band from 94.7 - 95.7 GHz crosses frequency bands given in the proposed changes to 47 CFR Section 2.106 Table of Frequency Allocations. The FCC may wish to review this condition.

Please contact Ron Wasko of my staff at 313/871-6335 if you require additional information concerning any aspects of the AAMA comments.

Sincerely,

Vann H. Wilber

Vann H. Wilber, Director
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